MODIS Technical Team Meeting
Thursday, July 10, 2003
GSFC Building 33, Room E125

Vince Salomonson chaired the meeting. In attendance were Shaida Johnston, Chris Justice, Robert Wolfe, Jack Xiong, Michael King, Ed Masuoka, Wayne Esaias, Steve Kempler, Bob Barnes, Bill Barnes, Dorothy Hall, Eric Vermote, and Barbara Conboy, with Yolanda Harvey taking the minutes.

1.0 Upcoming Meetings

MODLand Workshop, July 15-16, 2003, Baltimore-Washington International Airport (BWI) Marriott
IGARSS 2003, July 21-25, 2003, Toulouse, France (abstracts deadline past) http://www.igarss03.com/
10th International Symposium on Remote Sensing by The International Society for Optical Engineering (SPIE). September 8-12, 2003, Barcelona, Spain (abstracts deadline past) http://www.spie.org/info/rs
MODIS Science Team Meeting, September 30-October 2, 2003, Baltimore-Washington International Airport (BWI) Marriott

2.0 Meeting Minutes

2.1 General Discussion

Conboy announced that the MODIS Science Team Meeting will be held at the Baltimore-Washington International Airport (BWI) Marriott from September 30th to October 2nd. King noted that Jim Dodge is hoping to send out the results of recompete proposals by October 1st, but this seems optimistic.

Salomonson reported that he made a presentation on "MODAPS Lessons Learned" to the Earth Sciences Information Systems Subcommittee (ESISS) chaired by Bernard Minster. The presentation and discussion seemed to go well.

2.2 Instrument Status

Xiong reported that he sent some charts to Vermote for the upcoming MODLand meeting.

Xiong reported that both instruments are working normally for the Earth view, except for what is reported below.

2.2.1 Terra MODIS

Xiong reported that on Terra the SRCA 10W radiometric calibration will be done twice per month. This change (from monthly to twice per month) doesn't have to have the SB review since this calibration activity and its operation frequency are well defined in the operational concept document (OCD). Roger Drake (SBRS) and Chad Salo (MODIOT) are both involved in making this change

Xiong reported that the Solar Diffuser (SD) screen calibration is being done continuously. Salomonson noted that Paul Ondrus would like to know how the process is going, and wondered if MCST is looking at diurnal effects. Xiong said yes; they're doing calibrations

and tests to find out. Salomonson said that there have been suggestions that since the door will now be continuously open on Terra, perhaps the same should be done on Aqua. Salomonson is advocating that the present, standard approach be continued on Aqua MODIS until some definitive reason (e.g. it is understood what the root cause for the solar diffuser screen failure on Terra is understood) says otherwise. (See **Section 2.5 Oceans** for discussion on M1s and the SD Screen.)

2.2.2 Aqua MODIS
Xiong said that starting this month MCST will be changing the SD calibration on Aqua by doing it every two weeks instead of weekly (though using the same method – two calibrations in a row, one with the screen open and one with the screen closed). The other OBCs activities will remain the same.

2.3 DAAC
Kempler reported that they will finish reprocessing corrupted data by July 28th, and then the DAAC will be back to nominal reprocessing. Salomonson asked what the percentage was of corrupted data, and Masuoka said that the concern wasn't the percentage, but that the corruptions were scattered around. The checksums will find any leftover corruptions. Kempler noted that the checksums are now back online, and production continues.

Kempler noted that he's been following the email discussion about Coronado and the SDP toolkit, and wondered if people will still be getting the toolkit from him. Masuoka said that the process will go through the ECS, but that they're trying to reduce the time it takes to get user's approved to download the SDP toolkit source code. As far as MODIS PGEs go, they will still be made available through Coronado.

Kempler reported that MOPITT is asking the DAAC to run them approximately 30 TB of old MOD06 data, and they are currently getting it via subscription. This amounts to about 20 GB per day. In addition, they have requested 200 days of old cloud mask data, which amounts to about 3 TB. Esaias asked how this will affect the Oceans ingest rate, and Kempler said that the daily impact would be in GB/day, not TB. Distribution would be handled via a driver. Masuoka also pointed out that distributing data to MOPITT could affect the rate of ingest of MODIS products into the archive. Esaias asked how quickly the DAAC will be able to ingest Oceans data while filling the MOPITT order, and Kempler said that he wasn't sure, he'd have to run tests to fid out.

(NOTE: In a later email, Kempler submitted the following about the issue: (1) Yes, this will obviously impact data ingested into the DAAC and distributed from the DAAC. (2) This is not different than the 15TB Simpson order. In addition to the work we did to get Simpson's order(s) complete, we will perform the following to minimize the impact of this exercise on MODIS production:

1. Distribute the older data via media and electronically, as we did for Simpson, over a long, but reasonable amount of time. This lengthy time period (to be calculated) will need to be acceptable. This will impact GES DAAC personnel workload as well. However, see #2.

2. Examine mining out only the specific data from MOD06 desired. This may actually reduce the volume of data to be distributed by 2 orders of magnitude. The data

mining environment that we have been pushing for over a year may have its payoff

3. Examine the possibility of dedicating archive drivers to ingesting MODIS higher-level products. That is, MODIS data ingest gets high priority on a sufficient number of drives.)

2.4 MODAPS

Esaias said that the Aqua reprocessing has to start in November because it is driven by the need to have the Aqua reprocessing underway for the upcoming MODIS annual product review at NASA HQ. Masuoka said that modifications to the Level 1B for Aqua to deal with band-to-band misregistration and the subsequent testing of PGE02, which generates the Level 1B, and testing of the downstream PGEs. He thought that by December 1st the science tests would be done and the results reviewed by the science team so that PGE 02 and PGE03 could be delivered to the DAAC by December 3rd. Given a December 3rd delivery, the DAAC should be able to have the Level 1 production running for Aqua by December 24th. The earliest start for the production of higher-level products in MODAPS is January 1st, based on required time for science testing. Based on a 3x production rate for Level 1B, the Aqua reprocessing will finish with 18 months of Aqua reprocessing by July 1, 2004. King noted that we would have finished collecting two years of Aqua data by the time that 18 months of reprocessed Aqua data are completed. Masuoka said that he would send the charts he presented showing the preliminary schedule to Yolanda Harvey for distribution to the Tech Team attendees. Mike Teague will build the working Aqua reprocessing schedule from these preliminary dates and discussions with key participants.

2.5 Oceans

Xiong said that MCST also has a lot of M1s due to Terra's SD screen. This will create some fluctuations on the Land band. Right now the LUT that is to be delivered on July 11, 2003, is using first day average calibration, but they're going to keep tracking the issue. The variation on all bands is from 0.2 to 0.5 percent. Salomonson asked whether the L1B is going to change, and Esaias said that for the Aqua reprocessing, they might want to change it, but it really depends on how things fall out. Right now they use real M1s, so it might make more sense to use constant M1s and degrade them smoothly. That might impact how the L1B is made for Aqua, and they don't want to make a mistake, so they're looking into it. They're concerned because right now they're seeing a year's worth of variabilities in just a single day of data, and they've concluded that this is caused by just the orbit-to-orbit variations causing noise. In addition, the SD calibration every two weeks adds more noise. It's just a hypothesis at this time, but they need time to digest this.

The oscillating radcor coefficients and the Southern Ocean anomaly seen in SeaWiFS is now seen in Terra (and not Aqua). Salomonson asked why it's not observed in Aqua, and Esaias said that it's probably in the SD data because they haven't had the same amount of time to make adjustments on Aqua as they had on Terra. If this hypothesis is correct, then they may not have to leave the door open all the time. They could use the lunar looks and the long term trending and instead do a single comparison against MOBY. Xiong said there were a number of factors that could cause the variation among the bands, such SD BRF, SDS vignetting factor and possibly the different temperature

effects. Esaias said that it's the holes in the SD screen that are causing the problem. Salomonson said that we should be able to apply this new understanding to Aqua, and avoid some experimentation. Xiong said that there is a model of the SD screen's effect, but it's hard to do. Bill Barnes said that they can model the screen's effect, but not that of the gold insulation. Salomonson observed that it looks like we're going to learn a lot from this anomaly.

2.6 Land

Justice reported that the MODLand meeting will be held next week (see **Section 1.0** for dates). Salomonson noted that he will be attending the meeting on the morning of the 16th, and Justice noted that Martha Maiden will be there on the 15th. He's also getting ready for the Earth Sciences Update. Salomonson noted that he is scheduled to speak at that meeting, but might not be able to make it. Justice said that since he'll be there giving a presentation anyway, he could stand in for Salomonson if needed.

2.7 Atmospheres

King reported on the GLAS laser sampling over the Antarctic Peninsula, and said that where the laser found cloud cover, so too did the MODIS cloud mask, and now they're working on getting global statistics. They only looked at one Terra granule, but they're hoping to look at some from Aqua before the GLAS laser is out of optimum range. They also want to see how the cloud mask works at night as well as day, and they're trying to get an independent assessment of performance over the Polar Regions. He noted that some on the Science Team are trying to get ICESat turned back on with the second laser, but that probably won't happen during the next few weeks when the ICESat orbit coincides with the MODIS swath on Terra. The next time this will occur won't be until April 2004 (for Terra) or July of 2004 (for Aqua).

King reported that Franco Einaudi has asked him to put together a white paper on EOS contributions by the Earth Sciences Directorate over the past ten years. He wrote some sections about MODIS clouds and aerosols, and has additional contributions on global sea ice, snow cover, data assimilation (DAO), ice surface temperatures, calibration facilities, etc. The paper is already quite extensive, and it's not yet finished. There are also some sections on project science and validation capabilities, but what are missing are sections on other MODIS contributions (except MODIS fires, atmospheric correction, and oceans). He's focused on EOS science contributions, so hasn't included anything from the DAACs or MODAPS. There is also room for improvement in the validation area, like MPL-et and field campaigns like SAFARI 2000. He said that he will try to define what is missing and solicit contributions.

2.8 Cryosphere

Hall reported that she participated in the NSIDC teleconference on Monday (July 7). The MOD10A1 browse product will also come out soon, and thereafter the sea ice browse product will be released. In addition, the snow albedo product will be out around August 1st. The snow albedo code is currently awaiting science testing.

3.0 Action Items

3.1 New Action Items

3.1.1 Masuoka to send Harvey the Aqua reprocessing schedule; Harvey is then to distribute it to the 7/10 MTT meeting attendees.

3.2 Old Action Items
3.2.1 Kempler to coordinate with Oceans group on creating documentation for the DAAC on the new Oceans L1A data subsets.
Status: Open.

3.2.2 Tech Team to further discuss TRW using MODIS data for validation of the NPP/NPOESS production process.
Status: Open.

3.2.3 PIP to develop list of items to go into work plan for the new contract (EMD).
Status: Open.

3.2.4 Ed Masuoka to invite a NOAA delegate to the weekly MODIS Tech Team meetings or the PIP meetings.
Status: Open. Masuoka sent the invitation.